



Baseline measurements: Getting the facts

A large share of the sand required for the construction of Maasvlakte 2 - Rotterdam's new port area in the North Sea - will be extracted at sea. As this operation is not allowed to have a negative impact on the local marine ecosystem, the contractors need to have an earth removal permit. Research has since established at which sites this extraction of sand will least affect the marine ecosystem.

VOORDELTA

The Maasvlakte 2 sand extraction pits are situated just outside the Voordelta, a protected nature reserve off the Dutch coast. The Voordelta is protected by the European Birds and Habitats Directive, which establishes strict conditions for any operations in such areas. To determine what the effects of sand extraction activities will be, a study has been made of the existing marine life at various North Sea locations. This research focused on the impact of sand extraction on flora and fauna living on and below the sea bed, and on fish and silt deposits.

ENVIRONMENTAL IMPACT ASSESSMENT

This research was carried out in the context of an extensive Environmental Impact Assessment (EIA), which is required for all large-scale projects that are undertaken in the Netherlands. This mandatory report describes the consequences of a specific project for the environment and the local surroundings.

The EIA dealing with the construction of Maasvlakte 2 describes - among other things - the consequences of the sand extraction activities.

IMPACT ON THE MARINE ECOSYSTEM

One of the conclusions of the EIA is that the work at the sand pits has two significant effects. In the first place, local species living on the sea bed will disappear along with the sand at the extraction sites. After extraction is completed, these sea bed life forms will recover within several years thanks to re-colonisation. Another effect is that during extraction, water filled with sediment particles flows from the dredgers back into the sea. These particles cloud the seawater, allowing less light to pass through. A possible effect of this may be a decline in the growth rate of local algae. Algae serve as food for sea snails and molluscs, which in turn are a staple diet of bird and fish species. In other words, at a local level, clouded seawater can lead to less food for a number of animal species.

Getting the facts

TIMELINE

The first baseline measurements focusing on life forms on the sea bed were carried out in 2006 and 2007. In this period, each baseline measurement involved taking core samples at around 300 different sites to a distance of 50 km off the coastline between Schouwen and IJmuiden. It is crucial to collect such a large amount of samples in light of the sea bed's variable composition. The more samples are collected, the more reliable the ensuing data.

The baseline measurements of the juvenile fish and the silt took place in the months April, July and October of 2007. Each baseline measurement was carried out at 100 different locations to a distance of some 30 km off the coast between Walcheren and Den Helder.

BASELINE MEASUREMENT

The construction of Maasvlakte 2 started in 2008. Before work commenced, the existing situation was extensively inventoried by means of two baseline measurements. The baseline measurement dealing with the flora and fauna on and around the sea bed was supported by samples of the local sea bed taken at some 300 locations off the coast. In addition, sections of the sea bed were planed off to determine which species live at these sites. At 100 other sites, fish were caught using small, finely-meshed nets and the silt was measured. This baseline measurement focuses on juvenile fish, which are counted, measured and frozen for possible research at a later stage (juvenile fish are fish that have 'hatched' in the spring).

SCIENCE

Never before has a study into the effects of sand extraction on the sea bed biotope and fish species in this section of the North Sea been carried out on this scale. Indeed, the research, done with advanced computer models, is leading to a wealth of new knowledge. As a result, the Maasvlakte 2 project is able to make an important contribution to the development of scientific knowledge regarding the North Sea.

EARTH REMOVAL PERMIT

Using the EIA report to support its request, the Port of Rotterdam Authority has been issued an earth removal permit. This permit gives the organization permission to extract sand from the North Sea. One of the binding conditions of the earth removal permit is that the studies focused on measuring the impact of development activities on the local marine ecosystem are repeated. This way, it will be possible to monitor in practice whether or not the environmental effects described in the EIA report actually present themselves later on.

Maasvlakte 2

North Sea



The Netherlands

Rotterdam port area



Europe

The Netherlands



ROTTERDAM MAINPORT DEVELOPMENT PROJECT

The construction of the new port area, Maasvlakte 2, is part of the Rotterdam Mainport Development Project (PMR). This project also includes environmental compensation measures connected to the construction, the development of a 750 ha area for nature and recreation and improvements to the Existing Rotterdam Area. PMR is a partnership between national and regional government and the Port of Rotterdam Authority. For further information, please visit www.mainport-pmr.nl.

MORE INFORMATION?

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